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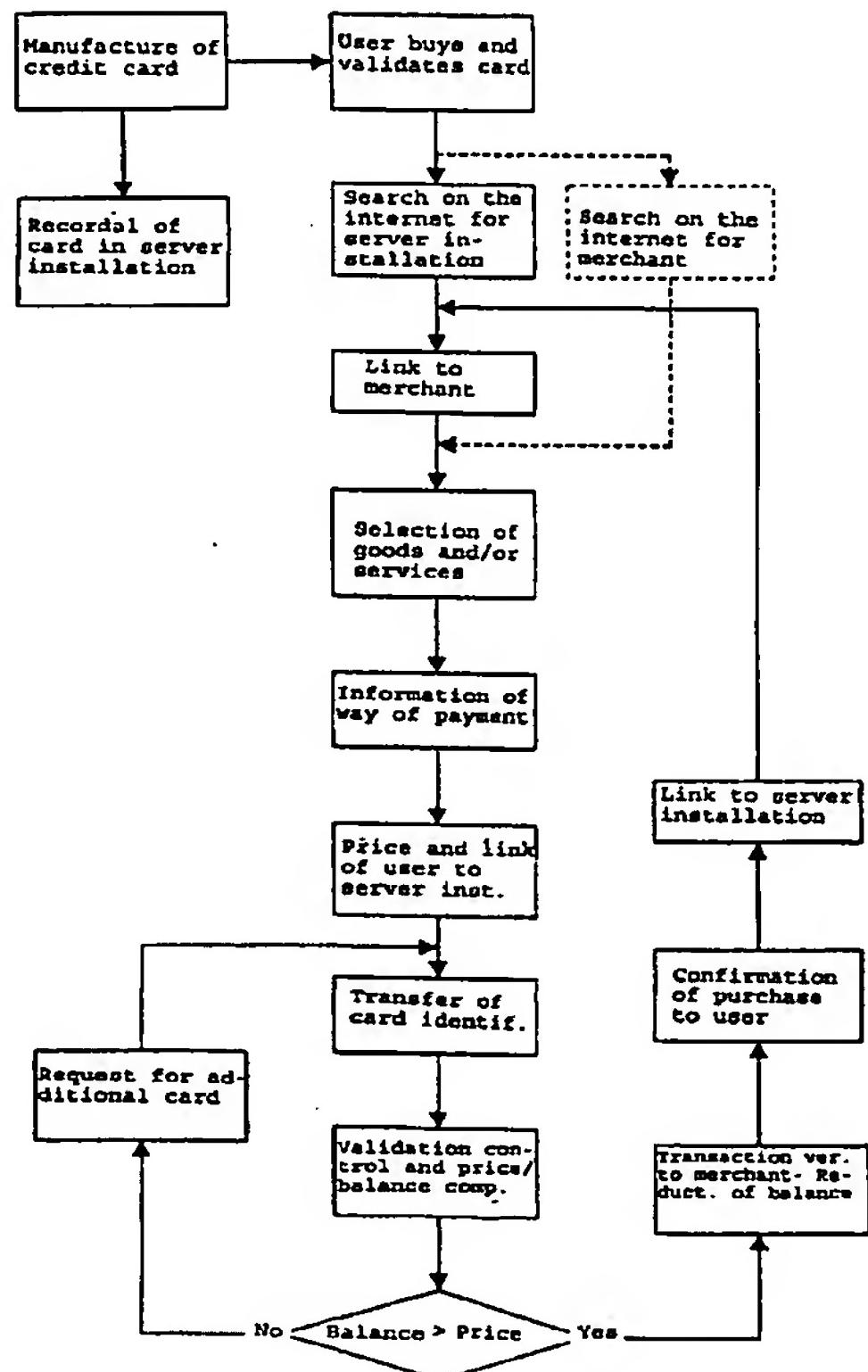
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(54) Title: A METHOD OF CONDUCTING PAYMENT TRANSACTIONS BY PURCHASE OF GOODS AND SERVICES THROUGH THE INTERNET



(57) Abstract: By purchase of goods and/or services through the internet, a number of merchants are associated with a common payment communicating server installation. As means of payment a payment card acquired in advance by the user may be used, for instance a scratch-off card, with which card an individual balance stored in the server installation (2) is associated. After selection of goods and/or services, the user transfers information about the use of the credit card as well as card identification thereof, whereby, in the server installation (2), the purchase price is compared with the balance of the card, and, if the purchase price is lower than the balance, a verification of the transaction is given to the merchant, the balance being at the same time reduced by a corresponding transaction amount, which is transferred to the merchant (6).

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A METHOD OF CONDUCTING PAYMENT TRANSACTIONS BY PURCHASE OF GOODS AND SERVICES THROUGH THE INTERNET

The present invention relates to a method of 5 conducting payment transactions by purchase of goods and services through the internet, in which  
a) a user (7) by means of a data processing unit with browsing software is brought in contact with a web site offering goods and/or services from a merchant (6),  
10 b) from said offer selects the item/s and/or services desired to be purchased,  
c) transfers payment information from a payment facility through interactive communication with the web site of the merchant (6), and  
15 d) receives confirmation of the conduct of the purchase transaction.

There is an actual and rising tendency towards electronic offering and trading in goods and services, either as a supplement to or as a replacement for 20 traditional offering and trading forms. These goods and services may for instance be an offer for sale of electronic publications instead of printed ones, mail order sales, purchase of tickets, hotel booking, book-making and lotteries, on-line arcade games, etc.

25 This is especially due to the good opportunities given by the internet of getting in contact with computers, or files and programmes thereon offering and giving information about goods, services and the like.

These pieces of information are available on so- 30 called web sites, to which a number of home pages may be associated. The information given on these pages may be downloaded by the user and viewed on his home computer or a similar device, for instance a WAP mobile phone.

35 With a view to this, the user uses a computer

programme, a browser. The browser is used to indicate which computers are to be communicated with and which pages are to be downloaded to the user's home computer from these computers and when they have been downloaded  
5 to show them on the user's computer.

Though part of such goods and services are for free, the major part requires a payment, and there is a distinct need for a direct, ad hoc user's payment.

The most frequent way of paying on the internet is  
10 by means of the international credit cards. Such cards are provided by the creditor with card identifications in the form of a specific card number, an expiry date, the name of the card holder, and other kinds of identification, like for instance a photo of the card holder.  
15

When such credit cards are used on the internet for the purchase of for instance mail order goods, the following typically occurs.

On the web site of the merchant, the card holder fills on his computer by means of the browser and by  
20 keying of appropriate commands a virtual shopping cart.

When the desired goods are in the shopping cart, the card holder passes on, by means of the browser, his credit card information items, typically card number and expiry date. The browser transmits via a safe line  
25 these pieces of information to the merchant who passes them on to the creditor, which on basis of the card information verifies the validity of the card to the merchant, who can then verify the transaction in the form of purchase of goods.

30 The financial settlement is effected thereby that the merchant, on basis of the card information, gets the amount specified by him from the creditor, which in turn then has to get the money from the card holder.

This whole system is to a high extent based on  
35 confidence and mutual agreements. The card holder must

trust that he will not be charged for more than he actually receives in respect of goods and services. The creditor must be confident that the card holder does indeed pay the debt accrued by his use of the card.

5 This entails i.a. that persons who do not have the required credibility cannot get access to the articles and services offered.

This system functions to a high extent satisfactorily, as long as it is a question of large transaction amounts.

If, however, it is a question of smaller amounts of money, i.e. less than 10 Euro, the system becomes complicated. Moreover, the risk of forging with the information of the card may to the card holder seem out of proportion in respect of such small amounts. It would, for instance, be tedious if the card holder should use time and effort to prove to the creditor that his card information has been used unlawfully by a third party, or that a dishonest merchant offering goods or services unlawfully demands a larger amount than he is entitled to, if the card has only be used for a single, minor transaction. Furthermore, credibility is required, as mentioned before, in respect of larger sums, irrespective of the fact that in respect of the goods and services offered it is a question of transactions involving small amounts of money.

Another drawback is that payment cannot be made anonymously. Thus, the creditor, who monitors the use of the card, knows where and for what the card has been used. Furthermore, statements of account are sent to the card holder, from which the use and the amounts appear and therefore can be seen by a third party gaining access to the user's mail.

Furthermore, it will typically be a requirement in connection with the issue of a credit card that the

card holder opens an account in a bank. There will thus, for a given transaction, be at least four actors, viz. a merchant, a creditor, the card holder and a bank.

5 In connection with the electronic transfer of credit card data from the card holder to the creditor, or to the merchant offering goods and services, systems have been developed like CyberCash, FirstVirtual by the company of the same name, and SET (Secure Electronic  
10 Transaction), with the purpose of ensuring that the pieces of information will not be intercepted by unauthorized persons, and which to a certain extent guarantee the card holder a certain anonymity in relation to the merchant offering goods and services,  
15 however only as long as physical goods are not to be delivered to the card holder, who will then have to give up his anonymity and pass on information about his name and delivery address.

In the traditional trading with products in the  
20 form of goods and services, which, seen one by one, has only a minor economic value, cash is traditionally used.

This offers several advantages.

Cash money is anonymous and the transactions thus  
25 not traceable.

The risk of forging, theft, fraud, etc. is limited to the cash amount present in one's purse or the like, or to what had to be used for a given transaction.

No further additional costs accrue when exchanging  
30 cash money for goods or services.

However, cash cannot be used in connection with purchase of goods and services which are based on electronic media like the internet, as the handing over thereof demands the physical presence of the persons  
35 involved.

For use in connection with electronic offering of goods and services of minor economic value various other payment systems have been developed in respect of small amounts of money.

5 By way of example may be mentioned Ecash from the company DigiCash, Netcheque developed by the University of Southern California, MilliCent by the company DEC and NetBill by Carnegie Mellon University and Visa International.

10 These systems have all been mentioned in the article "Elektronische Zahlungssysteme im Internet", by Bern Hirschmann and Michael Wolf, accessible through the internet: <URL: <http://rhlx01..rz.fht-esslingen.de/~projects/Krypto/esz/esz.html>>, 10 February 1999.

15 In Ecash virtual coin blanket forms are generated with a serial number and a value in an electronic purse on the user's computer. The blanket forms are sent to a bank, which embosses the blanket forms by providing them with a digital signature and which returns them to 20 the user and debits the customer's account. The serial number is coded so that the bank cannot read the serial number.

The user may then extract the serial number from the returned, signed virtual coins and use them fully 25 anonymously.

In a typical transaction, in which the virtual coins are used, the following happens:

The user, who has for instance selected a product and wants to order, sends from his browser a purchase 30 request to the merchant's server and thereby activates a CGI script.

The CGI script instructs the merchant's virtual purse to send a request for payment to the user's virtual purse.

35 The user's virtual purse requests identification

of the transaction and confirmation of the size of the amount. The user may at this time discontinue the transaction.

The user's virtual purse transfer the desired 5 amount in the form of signed, virtual coins to the virtual purse of the merchant. If there is not sufficient coins, the process is discontinued, and a fault is indicated.

The merchant then sends the coins transferred to 10 the server of the bank to have them verified.

The bank examines the coins as to authenticity and validity and rejects coins that are not authentic or have been spent several times.

The virtual purse of the merchant then passes on 15 information to the user's virtual purse about the successful or unsuccessful transaction.

Then the transfer of the product may be conducted electronically, by mail or in another way, according to the nature of the product.

20 Netcheque is in principle like a conventional cheque bearing the account number of the person drawing the cheque, identification of the person to whom the cheque is made out, amount and currency as well as a digital signature. This system excludes anonymity.

25 Netbill is also cheque-based and further has as a requirement that both customer and merchant open an account with Netbill. This system has no built-in anonymity either.

MilliCent is in principle an electronic account at 30 disposal which is opened at the merchant's and into which money is paid in advance.

Common to the above payment systems is that they require some kind of reporting and registration to put 35 the user in a position to use the system. Moreover, if the user is to use the system, resident software is to

be available on the user's computer. This software, which is often talked about as a purse, handles the transactions and the balance of the purse. Money can be electronically put into and taken out from the purse.

5 In all the above-mentioned electronic transaction forms there is in a manner known per se built-in security in the form of coding, use of secured lines, firewalls, etc.

These decidedly electronic systems offer the  
10 advantage that the user to a certain extent is ensured against abuse and has no immediate risk of loosing larger amount by forging.

However, these systems suffer from the evident drawback that they require independent resident software and therefore exclusively can be used for transactions conducted from the user's home computer. It is thus not possible to use the systems in some other connection.

The object of the present invention is to overcome  
20 the above-mentioned drawbacks of the prior art.

In respect of a method of the kind stated, this object is according to the invention met in that

e) a number of merchants offering goods and/or services through link connections is linked to a common  
25 payment communicating server installation having its own web site,

f) that as payment facility use is made of a payment card acquired in advance by the user from the server installation and having a card identification), with  
30 which card an individual balance stored in the server installation for purchase of goods and/or services is associated,

g) that after said selection of goods and/or services the user transfers as payment information information  
35 about use of said credit card to the web site of the

merchant,

- h) whereby information about the total price of the selected goods and/or services as well as the card identification of the credit card used are transferred 5 from the web site of the merchant and/or by the user to the web site of the server installation,
- i) that in the server installation a comparison is made of said total price with the individual balance of the credit card corresponding to the card identifi- 10 cation transferred, and
- j) that if said total price is lower than said balance, the server installation gives a verification of the transaction to the web site of the merchant for transmittal of said confirmation to the user, reduces 15 said balance by said total price and effects transfer of said total price to the merchant.

Relative to prior art types of payment transactions in connection with internet trading, the invention holds out the following substantial advantages.

20 The user gets maximum anonymity, the data transmission between the user, the merchant and the server installation not requiring transfer of information which identifies the user.

The user is ensured against economic losses which 25 exceed the face value or starting balance of the card issued.

Installation of special software in the user's computer is not required, which in particular offer the advantage that the card may be used from any computer, 30 for instance in an internet cafe or from another device like a WAP mobile phone with access to the internet.

The user thus does not himself have to own a computer, but can with the card for instance make use of offers for goods and services via a borrowed or 35 publicly set up computer or terminal.

In relation to both payment by credit cards and by use of the above-mentioned known payment systems for electronic purchase of goods and services of minor economic value, the method according to the invention 5 holds out the substantial advantage from a user's point of view that the time used from user's transfer of the card identification to the server installation, possibly via the web site of the merchant, and till a transaction verification is given, is substantially 10 reduced, the server installation only controlling the validity of the card, i.e. that it is registered in the server installation and that the balance of the card covers the purchase made.

Advantageous embodiments of the method according 15 to the invention are stated in the dependent claims.

At the user's conduction of an internet purchase transaction the connection between the user and the merchant offering goods and/or services may in a manner conventional per se take place by a direct search for 20 the web site of the merchant, if the user knows in advance or assumes that the merchant in question is associated with the server installation. In this connection the card identification may be transferred to the web site of the merchant when the purchase 25 transaction has been conducted and from there to the server installation.

This connection is, however, preferably established by direct search for the web site of the server installation and link connection from there to the web 30 site of the merchant, the user getting access to a survey contained in the web site of the server installation over the number of associated merchants and possibly the range of goods and services offered by them.

35 The credit card used in the method will by the

server installation preferably be offered with face value or a starting balance in a number of fixed amounts, for instance 10, 20, 50 and 100 Euro. To ensure easy access to purchase of credit cards, they 5 may advantageously be offered for sale in retail shops, in particular those selling convenience goods, for instance newsstands, petrol stations, super markets and the like.

As previously mentioned it is a considerable 10 advantage of the invention that the user is ensured a very far-reaching anonymity, in particular relative to merchants offering goods and/or services, but also relative to the server installation which offer the credit cards for sale. This is, however, not to be 15 understood as a demand for complete anonymity. Like in conventional conduct of internet trading with payment by credit card, it also applies to purchase of goods which are delivered to an address given by the user that the user hereby voluntarily renounces part of 20 the anonymity.

If the total price of the goods and/or services chosen by the user in connection with a purchase transaction exceeds the balance of the credit card, the server installation will give the user access to pay 25 the difference by use of one or more additional credit cards with each their respective card identification.

Another possibility may be, if the smaller reduction of the anonymity connected therewith is acceptable, to increase the individual balance of a credit 30 card through transfer of payment from the user through canals known per se, for instance the user's bank or another kind of payment service.

The credit card used in the method may advantageously be of the kind which on a card carrier holds a 35 first piece of information of identification data and

a second piece of information of verification data as well as information about the starting balance associated with the card, whereby at least said second piece of information is applied to the card in such manner  
5 that it is hidden when the user receives the card, but may be made cognizable through an irreversible transaction made by the user. Such cards are in the form of so-called scratch-off cards known per se from GB-A-2 252 270 and JP 1021 4320.

10 The invention will now be explained in detail in the following on basis of an example of an embodiment and with reference to the drawings, in which

Fig. 1 is a flow diagram explaining the method,

Figs 2 and 3 are key diagrams of two examples of  
15 configurations of computer installations and web sites and browser software associated therewith at the server installation, at a merchant offering goods and/or services and at a user, respectively, and

Figs 4 and 5 are examples of a credit card for use  
20 in connection with the method.

As shown in the flow diagram in Fig. 1 and the key diagrams in Figs 2 and 3, the method according to the invention has the effect that the card issuer 1 disposing over a common payment conducting server installation 2, gets credit cards manufactured for use in the conduct of the method and offer these on sale on the market either by direct sale or delivery to end users or, as shown with dotted lines in Figs 2 and 3, through middlemen 3, which may advantageously be shops in the  
25 retail business, for instance those selling convenience goods, like newsstands, petrol stations, super markets and the like.

In connection with the manufacture of the card or in connection with the offer for sale thereof an entry  
35 is made in respect of each credit card in a card

database 4 in the server installation 2 giving information which unambiguously identifies the card in question. An example of the design of a credit card is described in the following with reference to Figs 4 and  
5 5.

The server installation 2 furthermore includes a merchant database 5, in which an entry has been made or an account opened for each merchant 6 associated with the server installation 2.

10 The credit cards are offered for sale with face value or starting balance in a number of fixed amounts, for instance as mentioned above 10, 20, 50 and 100 Euro. Normally, a credit card will only be delivered to users against payment of the face value of the card,  
15 but it lies within the scope of the invention to hand over such cards, in particular those with a low face value, free of charge or with a discount, for instance for advertising purposes.

When a user 7 has received a credit card corre-  
20 sponding for instance to the example of an embodiment shown in Figs 4 and 5, the card has at first to be validated or made ready for use by exposure of a hidden verification code.

A purchase transaction through the internet may  
25 then be conducted in that the user, from his own computer or any other computer or the like device with access to the internet, for instance a WAP mobile phone, conducts a direct search for the web site of the server installation, the domain name of which is stated  
30 on the credit card. In the key diagrams of Figs 2 and 3, direct search is indicated by a solid line between the computer installations in question.

The web site of the server installation 2 contains a survey of merchants 6 offering goods and/or services  
35 associated with the server installation, and preferably

also surveys of ranges of principal products for each of these merchants.

The user 7 now chooses one of the associated merchants 6 by means of a usual mouse click, and a link connection is then established to the web site of the merchant 6, said web site containing one or more surveys of individual goods and services offered for sale by the merchant. The establishing of such a link connection is in the diagrams of Figs 2 and 3 shown by 10 a dot-and-dash line between the respective computer installations.

Alternatively, a connection to the web site of a merchant 6 may also be established by direct search, as shown by a dotted line in the flow diagram of Fig. 1 15 and in the diagram of Fig. 3, which would typically be the case if the user in advance knows or has a reason to suppose that the merchant in question is associated with the server installation.

On the web site of the merchant 6, the user 7 will 20 now have access to information about all goods and/or services offered by the merchant in question and may select the goods and/or services which he desires to purchase, which, as mentioned above, may be carried out by filling a virtual shopping cart. The transfer of the 25 commands given from the user's computer to the web site of the merchant 6 is indicated in the key diagrams in Figs 2 and 3 by a dot and dash line between the respective computer installations.

When the user 7 has finished his selection and 30 passed on information about it, an automatic calculation is made on the web site of the merchant of the total price of the selected goods and/or services. In the example chosen here, the user 7 is now via the web site requested to state his desired way of payment, and 35 we assume in this case that the merchant in question in

addition to payment in accordance with the method according to the invention also accepts the use of other conventional ways of payment in connection with internet trading, for instance the use of international 5 credit cards.

If the user 7 in reply to this states that he desires payment by use of a payment card associated with the method according to the invention, this statement will, in the example chosen here, result in 10 a link connecting being established to the server installation 2 from the web site of the merchant 6, the merchant 6 transferring information about the total price of the selected goods and/or services thereto together with a transaction identification. The display 15 on the user's computer screen thus shifts automatically to the web site of the server installation, and on this, the user is now asked to transfer the card identification of the credit card used, which information, as described in the following, may comprise a 20 serial number and a verification code. The establishing of this link connection, whereby the user 7 is brought in direct communication with the web site of the server installation, offers the advantage that the user 7 at the end of the transaction may get direct information 25 about the remaining value or balance left on the card after he has made the purchase of goods and/or services.

Another possibility is that the user 7 transfers the card identification to the web site of the merchant 30 from where together with the total price of the goods and/or services purchased it is transferred to the server installation, as shown with a dotted line in the flow diagram in Fig. 1.

Whether one or the other kind of transfer of the 35 card identification is used, the server installation 2

will now hold identification of payment card used and information about the total price of the purchase made of goods and/or services. In the server installation a validation control of the card identification is then  
5 conducted to verify that the serial number transferred and the verification code transferred belong to the same card, and that it is registered with a balance in the database 4 of the server installation 2. If this control is in the negative, information will be passed  
10 on to the user and the merchant that the purchase transaction has been rejected.

If the validation control is in the affirmative, a comparison is made in the server installation of the total price of the purchase made and the remaining  
15 balance on the credit card used. If the price of the purchase made lies within the balance of the credit card, the server installation passes on a transaction verification and reduces the balance of the credit card in the database 4 by a transaction amount corresponding  
20 to the total price. While the remaining balance is being shown directly to the user on the web site of the server installation, the transaction verification is sent from the server installation 2 to the merchant 6, a link connection between the merchant 6 and the user  
25 7 being established, such that the merchant 6 may pass on a purchase and delivery confirmation to the user 7. In connection with an actual purchase of goods, the user 7 may in this connection be asked to transfer information about delivery address to the merchant.  
30 Such a request may also be made to the user 7 as soon as he has finished selecting goods and/or services which he desires to purchase, or perhaps earlier, before the user starts selecting goods and/or services.

If the user 7 has chosen to purchase one or more  
35 services, which may be delivered directly electroni-

cally, this delivery may be effected as soon as the transaction verification is available. Is it, on the other hand, a question of an actual purchase of goods to be delivered to the address given by the user,  
5 information may be passed on to the user about the time of delivery along with the delivery confirmation.

If the total price of the purchase made exceeds the balance of the credit card used, the server installation will, if the user 7 at this time communicates  
10 with the web site of the merchant 6, pass on information about rejection. If, however, a link connection has been established between the server installation 2 and the user 7, the server installation may instead  
15 pass on information to the user 7 that there is no backing for the purchase made, and in this connection the user is given access to use one or more supplementary credit cards by transfer of the associated card identifications to the server installation until the purchase made is covered.

20 Simultaneously with the reduction of the balance of the credit card used by the actual transaction amount, an increase by the same amount is made in the balance of the account of the merchant 6 in question in the database 5. Settling of balances in the accounts of  
25 the associated merchants in the database 5 may be effected by the server installation at regular intervals, for instance daily, weekly or monthly, or maybe upon a request from a merchant. Payment will typically be effected between the banks of the server installation  
30 and the merchant.

In the embodiment shown in Figs 4 and 5 of the credit card 8 made by the person 1 issuing the cards, such a card comprises a card identification with at least a serial number 9 and a unique verification code  
35 10 generated on basis of the serial number, and a

certain genuineness may therefore be verified. Such codes may be generated on basis of algorithms with logarithms formulas. Which method to use in practice is not of vital importance to the invention.

5 Preferably, the card also comprises a face value or a starting balance 11. Furthermore, the card may comprise a reference numeral 12, in which an issue date may be included.

10 The face value 11, the serial number 9 and the reference number 12, if any, are visible straight away on the card in the form of printing, embossing or the like.

15 The verification code 20 is, however, applied to the card in such a manner that it is hidden in the beginning but may be made cognizable at a desired point of time.

20 The code may for instance be covered by a layer of non-translucent material which may be scratched off in a manner known per se, for instance from certain types of lottery coupons.

25 The card 8 may further be provided with a suitable advertising area 13, which may partly serve to finance the printing of the card and the maintenance of the necessary computer systems and partly to ensure a suitable profit to the person issuing the card.

Such a card may be cheaply manufactured by printing on a carrier of paper, but carriers of other materials, i.g. plastic films, would also be usable.

30 Use of the credit card is not actually confined to internet trading, the card being in principle applicable in other places. It may in particular be foreseen that in the shops of middlemen, i.e. for instance newsstands, petrol stations or super markets, where the cards are bought, entry terminals for card identification and code will be present, such that a possible

remaining balance of a card may be used for purchase of a new card or may be refunded to the user. Such a terminal would also be usable for purchase of other goods if the middleman in question is registered as  
5 merchant in the server installation.

## P A T E N T C L A I M S

1. A method of conducting payment transactions by purchase of goods and services through the internet, in which
  - 5 a) a user (7) by means of a data processing unit with browsing software is brought in contact with a web site offering goods and/or services from a merchant (6),
  - b) from said offer selects the item/s and/or services desired to be purchased,
- 10 c) transfers payment information from a payment facility through interactive communication with the web site of the merchant (6), and
- d) receives confirmation of the conduct of the purchase transaction, characterized in
- 15 e) a number of merchants (6) offering goods and/or services through link connections is linked to a common payment communicating server installation (2) having its own web site,
- f) that as payment facility, use is made of a payment card (8) acquired in advance by the user from the server installation (2) and having a card identification (9 - 12), with which card an individual balance stored in the server installation (2) for purchase of
- 20 g) that after said selection of goods and/or services as payment information the user transfers information about use of said credit card (8) to the web site of the merchant (6),
- h) whereby information about the total price of the selected goods and/or services as well as the card identification of the credit card (8) used are transferred from the web site (6) of the merchant and/or by the user (7) to the web site of the server installation
- 35 (2),

- i) that in the server installation (2) a comparison is made of said total price with the individual balance of the credit card (8) corresponding to the card identification transferred, and
- 5 j) that if said total price is lower than said balance, the server installation (2) gives a verification of the transaction to the web site of the merchant (6) for transmittal of said confirmation to the user (7), reduces said balance by said total price and
- 10 effects transfer of said total price to the merchant (6).

2. A method according to claim 1, characterized in that the server installation (2) stores a survey of the number of associated merchants (6) and facultatively a survey of the goods and/or services offered by the merchants, and that the user's (7) connection with the web site of a merchant is made by direct contact with the web site of the server installation (2) and link connection from there to the web site of the merchant (6).

3. A method according to claim 1 or 2, characterized in that said credit card (9) is offered by the server installation (2) with a starting balance in a number of fixed amounts.

25 4. A method according to claim 1, 2 or 3, characterized in that said credit card (8) is offered by the server installation through middlemen (3).

5. A method according to one of the preceding claims, characterized in that the card identification on the credit card (8) is made anonymous.

6. A method according to one of the preceding claims, characterized in that if said total price exceeds the balance of the credit card (8)

corresponding to the transferred card identification, the user (7) is given access to use one or more supplementary credit cards, each having their respective card identification.

5        7. A method according to one of the preceding claims, characterized in that in the server installation (2) an increase of the individual balance of a credit card (2) may be effected through payment transfer from the user (7).

10      8. A method according to one of the preceding claims, characterized in that as credit card (8) a card of the type is used which on a card carrier holds a first piece of information (9) of identification data and a second piece of information 15 (10) of verification data as well as information (11) of the starting balance associated with the card, whereby at least said second piece of information (10) is applied to the card in such manner that it is hidden when the user (7) receives the card, but may be made 20 cognizable through an irreversible transaction made by the user (7).

9. A method according to one of the preceding claims, characterized in that information about the individual balance of a credit card (8) may 25 be transferred from the server installation (2) to the user (7) by transfer of the card identification to the web site of the server installation (2).

10. A method according to any of the preceding claims, characterized in that the user (7) 30 as data processing unit may use a WAP mobile phone.

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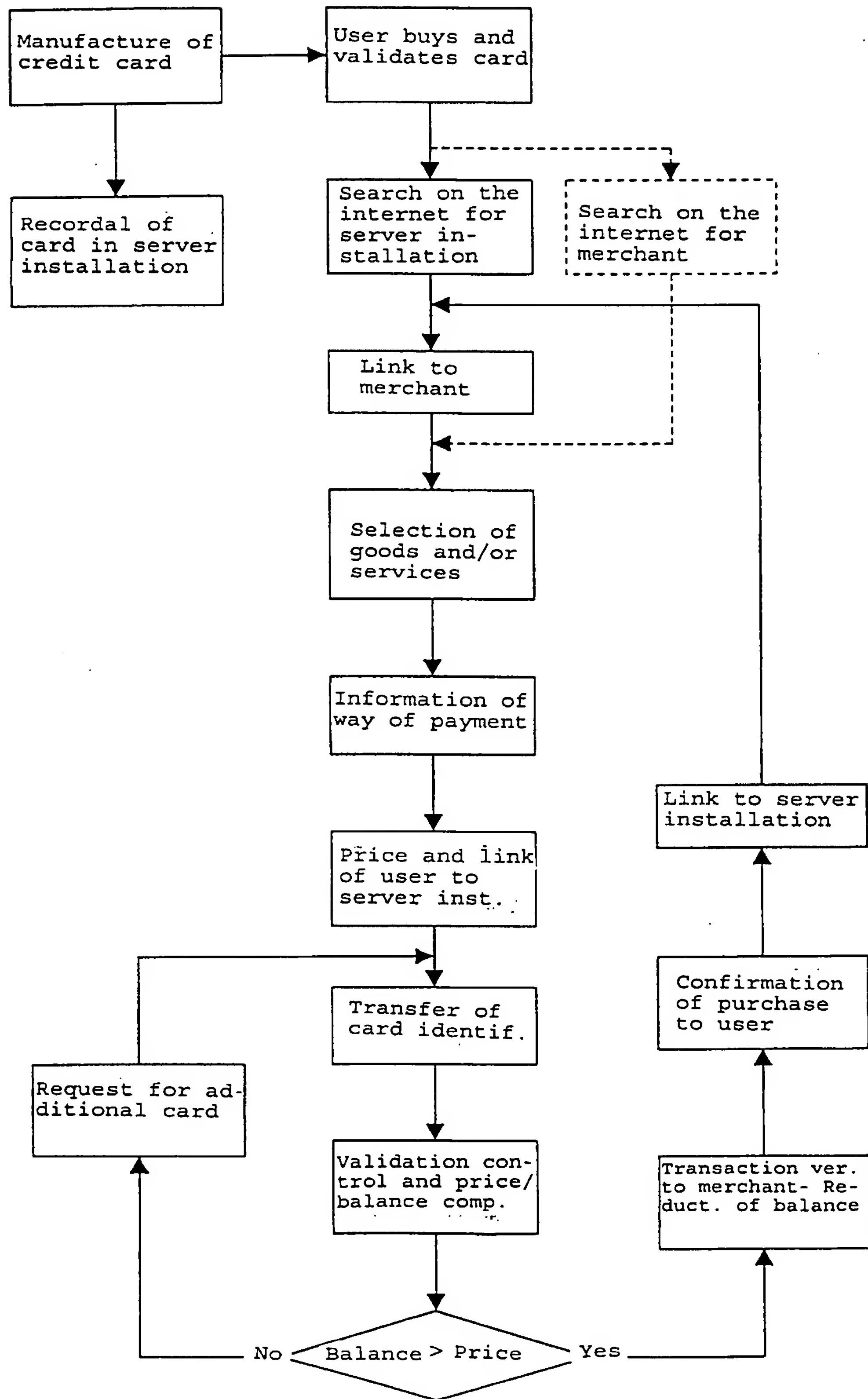


Fig. 1

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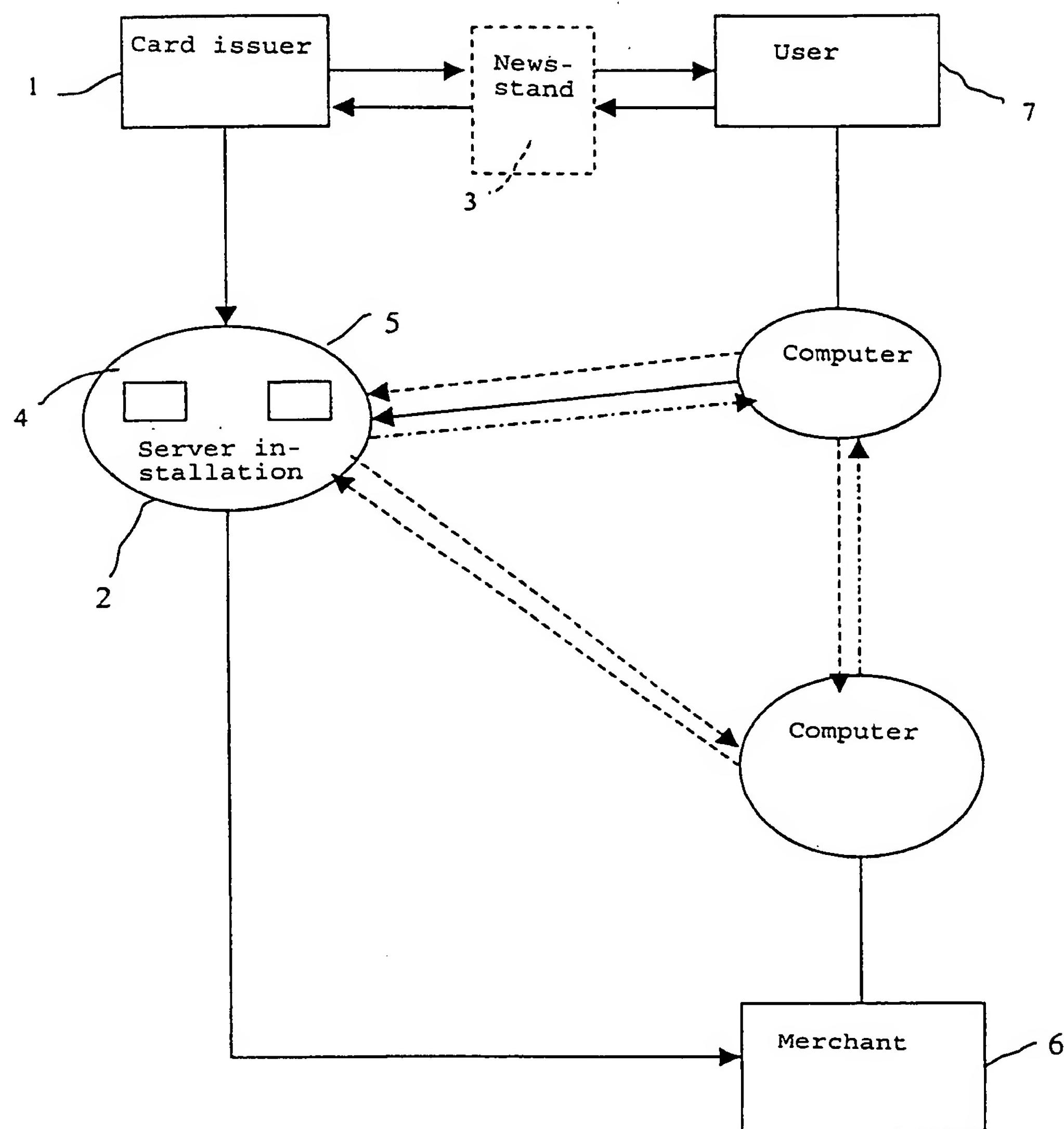


Fig. 2

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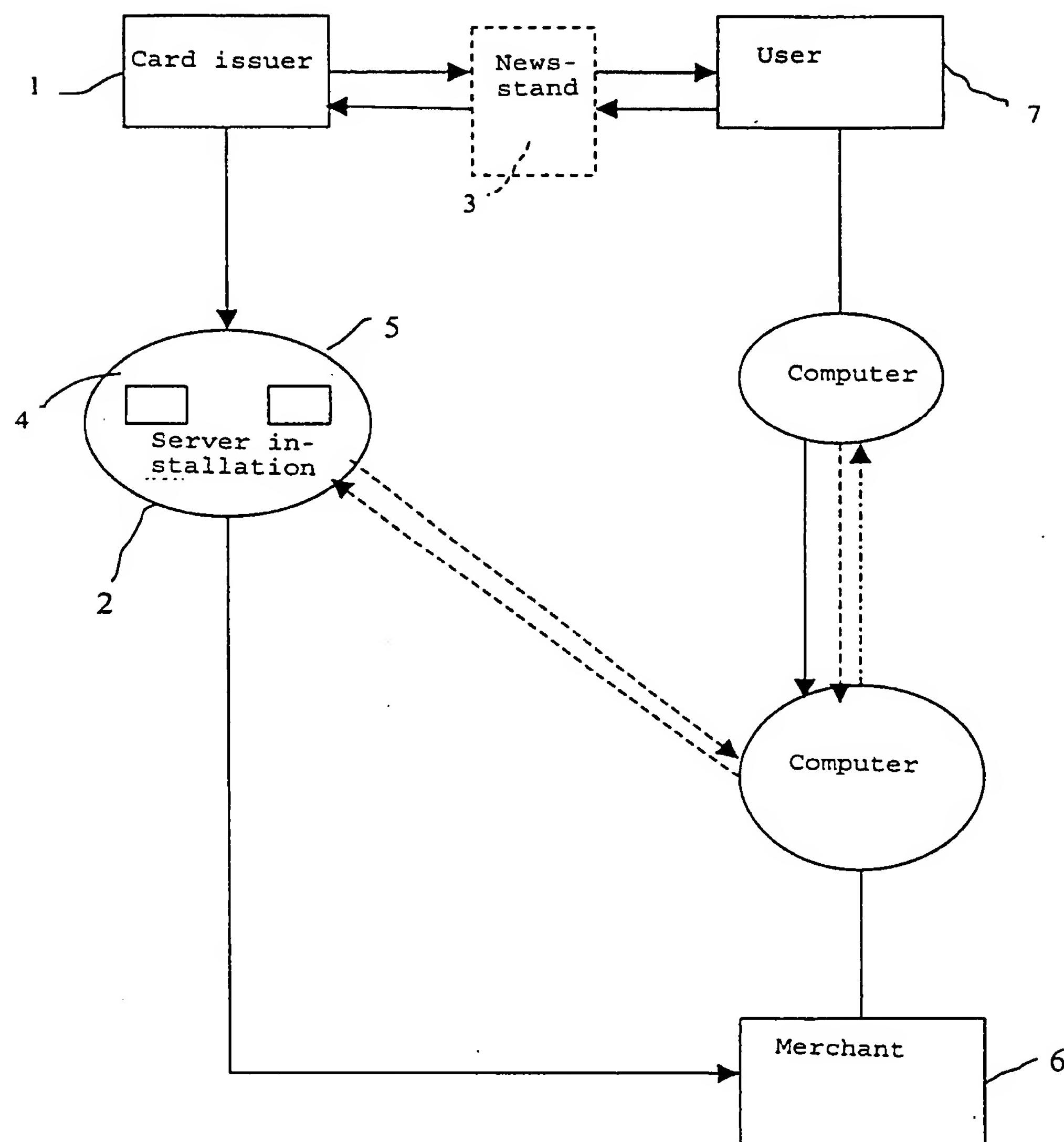


Fig. 3

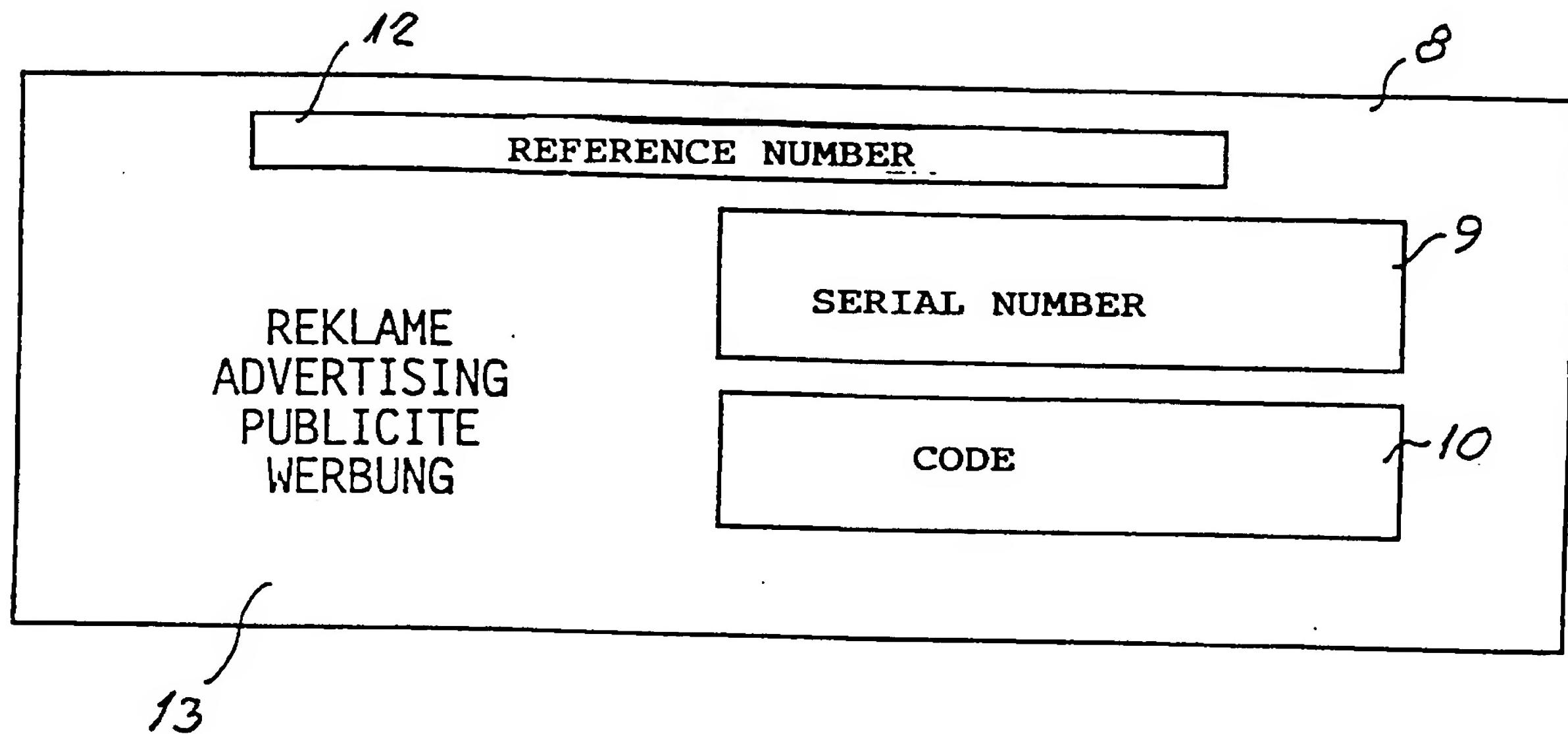


Fig. 4

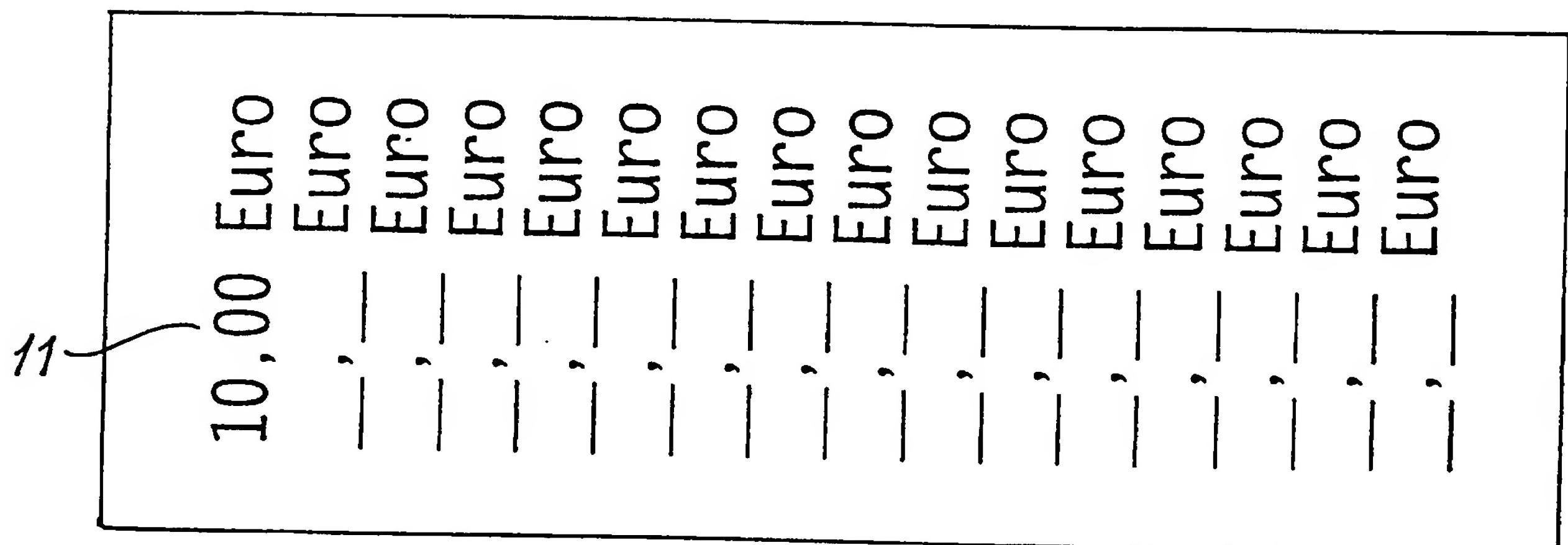


Fig. 5

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/DK 00/00458

## A. CLASSIFICATION OF SUBJECT MATTER

**IPC7: G06F 17/60**

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

**IPC7: G06F**

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

**SE,DK,FI,NO classes as above**

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 9907121 A2 (NETADVANTAGE CORPORATION), 11 February 1999 (11.02.99), page 2, line 19 - page 4, line 2, figure 1, abstract	1-7,9,10
Y	--	8
Y	GB 2252270 A (G.M. WREN-HILTON), 5 August 1992 (05.08.92), abstract	8
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 Further documents are listed in the continuation of Box C. See patent family annex.

\* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

20-11-2000

8 November 2000

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

03/10/00

International application No.

PCT/DK 00/00458

WO	9907121	A2	11/02/99	AU	8675398 A	22/02/99
				EP	1004086 A	31/05/00
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